

## ADJUSTABLE RETAINER FOR A HEADREST

### Background of the Invention

The present invention concerns adjustable headrests as found on dental chairs, vehicle seats, etc.

Typically a headrest is supported by a rib or post extending downwardly into a seat or chair back in a positionable manner. Some headrests are positionable, in an incremental fashion, to best support a user's head, the height of which will of course vary with different occupants. In a chair used by several persons during a day, as for example a dental chair, the headrest must be manually adjusted several times a day. Hence a headrest should be readily adjustable without substantial physical force being required.

10 For example, in a dental office the force required for repeated adjustment during a working should not be excessive or excessive to a dental assistant or the dentist.. Further, a headrest should not be susceptible to accidental displacement and yet infinitely adjustable to support the user's head in an optimum manner.

### Summary of the Present Invention

The present invention is directed toward the provision of a headrest assembly for use in place on chairs or vehicle seats and readily positionable to accommodate a wide range of user sizes.

A guideway on the seat or chair houses a post for rectilinear positioning. Infinite movement of the post is against the resistance of a retainer assembly to the extent the  
20 headrest is not subject to unintentional displacement but yet readily positionable when

desired. A retainer member is biased into post engagement in a precise manner to permit such positioning with light or heavy forces as desired.

The retainer assembly is concealed within the chair back but yet readily accessible for retainer adjustment. Access to the retainer assembly is via an opening in the chair back normally occupied by a removable fastener serving to secure a chair fitting. Added structure to a chair to provide such access to the interior of a chair back is thereby avoided as well as detracting from chair appearance. A retainer is biased into contact with a post mounted sleeve of synthetic material to provide post adjustment in a controlled manner.

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#### Brief Description of the Drawings

In the accompanying drawings:

Figure 1 is a partial perspective view of a seat or chair back with fragments broken away to show the present invention;

Figure 2 is an elevational view of the seat or chair back of Figure 1 with the present invention thereon;

Figure 3 is a plan view taken along line 3-3 of Fig. 2;

Figure 4 is a partial elevational view of Fig. 2 with a fastener removed from the chair back and a tool inserted for adjustment of the present retainer assembly;

Figure 5 is a perspective view of a retainer arm;

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Figure 6 is a bearing sleeve prior to forming for placement into a chair back mounted guideway or channel; and

Figure 7 is a bottom view of Fig. 6.

### Detailed Description of the Preferred Embodiments

In the accompanying drawings wherein applied reference numerals indicate parts hereinafter identified, the reference numeral 1 indicates generally a fragment of a chair back which may be the back of a dental chair or that of another type of chair for example a vehicle seat. Figure 1 discloses an upholstery component 2. A reference numeral 3 indicates the chair back outer component which is of formed metal.

A channel 4 extends upwardly along the length of seat back 3 with channel flanges 4A-4B secured to back 3 as by welds. Channel 4 and seat back 3 define an elongate open area or guideway 9 for the reception of a post 5 of a headrest assembly which includes a headrest proper at 6. Post 5 corresponds generally in section to the space defined by channel 4 and the seat back to enable rectilinear positioning of post 5 to locate headrest 6 a specific distance from the chair or seat bottom (not shown) to accommodate successive dental patients during a work day. At the upper terminus of channel 4 are tabs 7 each with a nut 8 secured thereto.

A retainer assembly located generally at 12 has a screw 16 with a head for the reception of a tool for adjustment purposes as later described. A channel flange 20 carries a threaded element 21 for reception of screw 16 the lower end of which bears upon an arm 22. An arm end 22A is displaceable relative a side 5A of post 5. A proximal end segment 23 of arm 22 is moveably mounted on a flange 25 with a stud 24 on the arm projecting through an oversized opening 25A in flange 25. The somewhat

elongate, oversized opening 25A permits limited arcuate movement of retainer arm 22 in a plane containing post 5. Flange 4B defines an opening 19 to receive distal end 22A of arm 22.

A bearing sleeve at 26 is shown partially formed in Fig. 6 seats within an upper end segment of channel 4 and provides for smooth, uninterrupted travel of post 5. A segment 27 of the sleeve when installed in channel 4 is intermediate retainer arm distal end 22A and post side 5A. The bearing sleeve, best shown in Figures 6 and 7, is formed of a suitable synthetic material such as polypropylene with fold grooves at 28 enabling folding of the material into a shape of rectangular cross section. When folded, an ear 29 of the sleeve extends outwardly from a side of the bearing for reception within a notched portion of channel flange 4A to fix sleeve bearing 26 within the channel. With attention again to bearing segment 27, flexibility of the segment is enhanced by slotting of the fold line at 30.

Per Fig. 3, a trim plate at 31 on the chair back defines an opening 32 for passage of post 5. Trim plate fasteners at 33 and 34 engage tabs 7 and nut elements 8. Adjustment of threaded member 16 to vary the action of retainer arm 22 on post 5 would be infrequent and achieved upon removal of fastener 34 leaving aligned openings in trim plate 31 and tab 7, the nut 8 thereon to permit insertion of a tool 35 for engagement with the upper end of adjustable member 16. Tool 35, as shown in Figure 4, may have an hexagonal end for driving engagement with adjustable member 16.

In some applications of the present headrest retainer, the headrest post 5 may be virtually locked against any displacement.

While I have shown but one embodiment of the invention, it will be apparent to those skilled in the art that the invention may be embodied still otherwise without departing from the spirit and scope of the claimed invention.

Having thus described the invention, what is desired to be secured by a Letters Patent is: